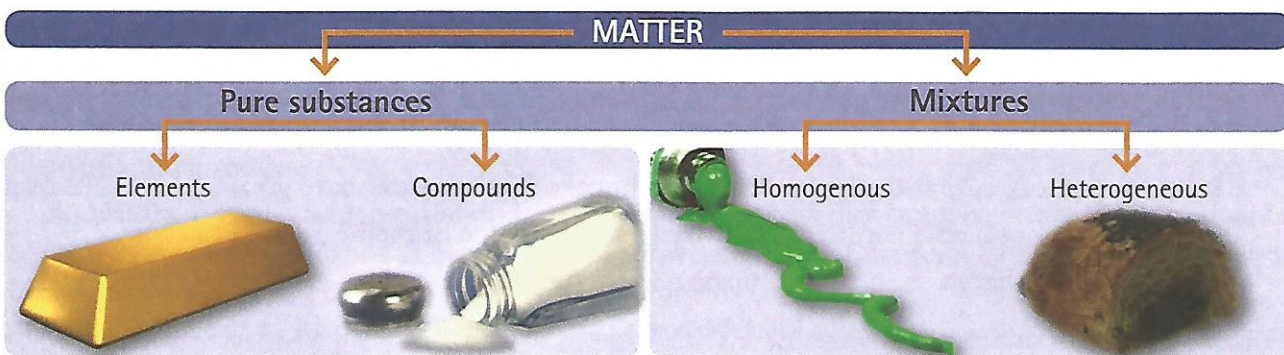


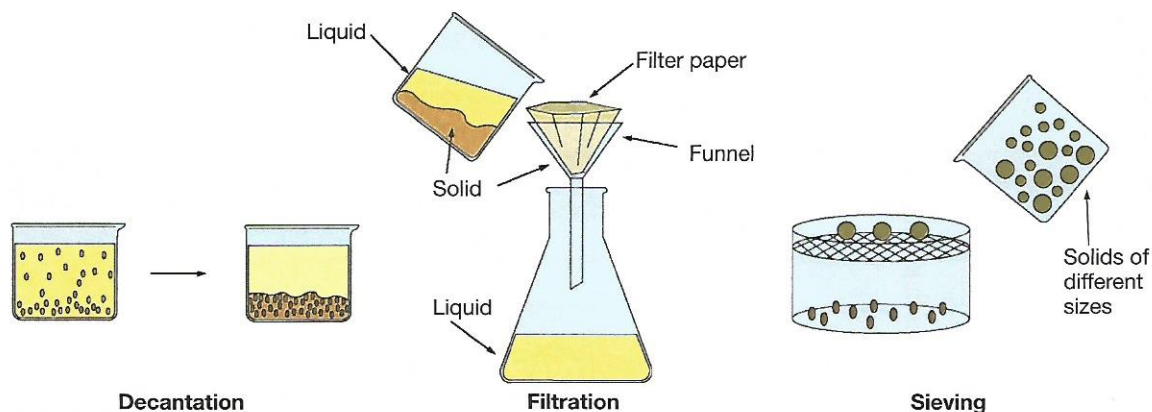
Classification of matter



- **Pure substances** have a definite chemical composition.
 - **Elements** are made up of a single type of atom: oxygen (O), nitrogen (N), iron (Fe), gold (Au), silver (Ag).
 - **Compounds** are made up of several different atoms: water (H₂O), carbon dioxide (CO₂), nitrogen dioxide (NO₂), sodium chloride or sea salt (NaCl).
- **Mixtures** are combinations of two or more substances which have different specific properties. Their chemical composition is variable.
 - **Homogenous mixtures** or **solutions** are mixtures in which you cannot see the different components. Examples: air, oil, milk, water and alcohol, water and sugar.
 - **Heterogeneous mixtures** are mixtures in which you can see the different components. Examples: granite, sparkling water, water and oil, water and ice.

Methods of separation of the components of mixtures

- Some of the procedures used to separate homogenous mixtures are:
 - **distillation:** the components of a liquid mixture are separated by using their different boiling points.
 - **evaporation:** a substance dissolved in a solution can be separated when the liquid evaporates and the solid crystallises.
- To separate heterogeneous mixtures we can use:
 - **decantation:** liquids of different density or mixtures made up of solids and liquids can be separated.
 - **filtration:** solids in suspension in a liquid can be separated.
 - **sieving:** solids can be separated according to their size with the aid of a sieve.



• **Activity 1. Answer the following questions.**

1 What is a pure substance?

2 What is an element?

3 What is a compound made of?

4 What is a mixture?

5 What is the difference between a homogenous mixture and a heterogeneous mixture?

• **Activity 2. Write three examples of homogenous mixtures and three examples of heterogeneous mixtures.**

Homogenous mixtures	Heterogeneous mixtures

• **Activity 3. Match each method of separation with its definition.**

1 Distillation	a separates solids of different sizes.
2 Evaporation	b separates solid substances from a solution when the liquid evaporates and the dissolved solid crystallises.
3 Decantation	c separates the components of a mixture depending on their boiling points.
4 Sieving	d separates liquids of different density or mixtures composed of solids and liquids.

• **Activity 4. Identify the method of separation represented by each drawing.**

